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(b) (3)

DCI JOINT BRIEFING FOR
PREPAREDNESS INVESTIGATING COMMITTEE OF THE
SENATE ARMED SERVICE COMMITTEE AND THE
SENATE AERONAUTICAL AND SPACE SCIENCES COMMITTEE

CENTRAL INTELLIGENCE AGENCY
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I. INTRODUCTION

A. Topics to be covered:

1. Review of general Soviet posture.
2. Summary of Soviet missile program.
3. Soviet space program.
4. Remarks about sensitive areas in the world today.

B. My remarks will be primarily based on NIE's which represent views of the entire US Intelligence Community.

II. THE GENERAL SOVIET POSTURE

A. The Soviet leaders currently show great confidence and boast that trends of events is in their favor.

1. Their rate of economic progress, their scientific achievements, their growing missile capabilities, and their estimate of the political tendencies in underdeveloped countries all taken by them as suggesting favorable shift in world power relations.

2. From the position of strength which they believe they now have, they feel able, not only to engage the West vigorously on disputed issues when they wish to do so, but also to relax tensions when expedient without any imputation of weakness. (b) (3)

1

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~~TOP SECRET~~

B. In Soviet external policy, over the next five years, we expect to see elements of pressure and detente combined and varied as tactical advantage may suggest.

1. Whatever changes of emphasis may occur, the swings of policy are likely to fall within a range which excludes:

a. On the one hand, deliberate assumption of serious and uncontrollable risks of general war; or

b. On the other, any abandonment of the concept of continuing struggle between two irreconcilable worlds.

2. Soviet leaders may seek to draw political advantage from any improved power position relative to the West if it emerges as they expect.

a. They will/STILL try to win concessions basically through negotiation.

b. But the element of pressure and threat will probably become more pronounced.

c. The chances of miscalculation may be increased.

C. General tone of Khrushchev's speech to Supreme Soviet 14 January reflects his confidence in growing Soviet strength.

D. We are inclined to accept Khrushchev's statements on manpower strength and military hardware production.

1. Although his figure of 3.6 million men in the armed forces about 600,000 lower than our estimate, there has been downward trend in available military manpower for some years, and 3.6 million figure quite reasonable.
2. We have observed sharp cutbacks in bomber, fighter, naval vessel production.
3. We also believe that reduction of 1.2 million men will probably be carried out within the two years Khrushchev gave as an outside limit. (Defense Minister Malinovsky says by "autumn 1961.")
4. Reduction makes good sense both economically and militarily, and has propaganda advantages.

II. Soviet military establishment in for thorough reorganization.

1. In private remarks, Khrushchev has often shown impatience with military advice he is getting.
2. Although there has been considerable readjustment of Soviet forces in the last few years, he has apparently decided pace not fast enough.
3. Malinovsky, speaking immediately after Khrushchev, described the new program as follows:

> "Rocket troops...are undoubtedly the main type of armed forces, however...it is not possible to solve all tasks of war with one type of troops... we are retaining at a definite strength and in relevant proportions all types of our armed forces."

F. Khrushchev's apparent goal for force structure is as follows:

1. Strategic attack and air defense forces armed mainly with missiles.

2. A navy composed primarily of submarines as well as antisubmarine forces.

3. A ground force, equipped with tactical missiles, with increased firepower and airborne capabilities.

III. LONG RANGE BOMBER FORCES

A. Jet medium and heavy bomber strength of Soviet Long Range Aviation remained virtually constant over past year.

1. Long Range Aviation now has about 1,100 BADGER jet medium bombers (B-47) and about 120 BISON jet (B-52) and BEAR turboprop heavy bombers.

a. BEAR production ceased some time ago, BADGER production ceased in about mid-1959, BISON production continues at a low rate (one to two a month in fall of 1959).

b. Obsolescent BULL piston medium bombers (B-29) type retired rapidly in the past year--probably now completely phased out of Long Range Aviation units.

Numbers of man-years

B. Long Range Aviation remains best suited to operations against targets closer than the U.S.--for example, in Europe.

1. Majority of bombers are BADGERs capable of reaching most U.S. targets only on one-way missions.

2. From Arctic bases, refueled BISONs could reach U.S. targets on two-way missions--BEARs could do so without refueling.

C. Total Soviet bomber strength will probably remain relatively constant for next year or two, and decline thereafter. (Backup sheet on possible new bombers)

IV. NAVAL FORCES

A. Present submarine strength is estimated at about 420--more than half are snorkel-equipped long-range post-war design. This is a reduction from about 450 carried last year, as obsolete boats are retired.

1. Estimate about 300 subs constructed since 1950.

2. Current construction slow--approximately 14 in 1959--probably due change-over to new types.

B. Believe they now have a few nuclear subs--but have not identified.

1. Nuclear-powered icebreaker LENIN has completed trials; expected enter full service 1960.

2. Reactor used in LENIN basically adaptable to submarines.

C. A few conventially-powered Soviet submarines now evaluated as probably capable of launching ballistic missiles with nuclear warheads, though not from a submerged position.

1. One type of modified long-range submarine can probably carry two missiles of 200 n.m. or possibly 350 n.m. range.

2. A newly-constructed class which was first identified in 1959 may carry about five missiles of 350 n.m. range.

3. Based on requirements and technical capabilities, estimate that in 1961-1963 USSR will first achieve a weapon system combining a nuclear powered submarine with a 500- 1,000 n.m. ballistic missile, capable of launching from submerged position.

4. USSR's missile submarines could launch nuclear warheads against selected targets in the U.S. Present strength, estimated at about 10 conventionally-powered missile subs, will probably double by 1961-1962.

V. SOVIET GROUND FORCES

A. Soviet Ground Forces, in Khrushchev's eyes, will be smaller, but with greater firepower and much increased airborne capability.

B. Personnel strength and deployment unchanged in past year.

VI. MISSILE WARFARE SYSTEMS AND TEST PROGRAMS

A. Kapustin Yar Test Range

(CHART RANGE)

1. Flight tests with missiles of ranges up to 1,100 n.m. are conducted at Kapustin Yar Range. Intelligence coverage of this range is by multiple sources, including radar and M.ENT.

2. Since mid-1963, have been over 500 ballistic missile flight tests, (about 150 in past year) and considerable number high altitude vertical firings. (Secret sheet on test firings).

3. Some vertical shots carried animals which were successfully recovered.

4. This extensive flight test program gave Soviets an experience factor which provides a major basis for ICBM and space vehicle successes.

B. Tyura Tam Test Range

1. Soviet space and ICBM flights have been conducted on a range extending from Tyura Tam (in Central Asia just east of Aral Sea) which is the rangehead. There have also been several missiles fired which impacted in the Pacific Ocean.

CHART (ICBM shots)

2. To date, there have been 21 successful Soviet ICBM firings to 3,500 nautical miles or more emphasize of recent shot into Pacific. Fifteen of them in 1966, including four long shots in Pacific beyond usual Kamchatka impact area for ICBM's, two of which may have been connected with space program. Also some failures, about 30%. (after launch)

SIGIN Photon

3. To accomplish the new extension of Tyura Tam range into Pacific, Soviets have provided four SIGIN class freighters equipped with largest type ship-borne radar and other unique and highly specialized electronic equipment. Since these sea-borne instrumentation ships are mobile, they could provide global instrumentation capability for ICBM and space flight research.

4. Will digress here--discuss 30 January firing to new Pacific impact area near Johnston Islands

a. The vehicle was launched from Tyura Tam at about 1125 EST 30 January 1966. The total flight range of the vehicle was about 6720 nautical miles. The vehicle followed a normal (energy minimum energy) trajectory and after a flight of about 40 minutes impacted in the northern half of the Soviet announced area.

b. Telemetry intercepts were made over most of the flight path. Alaskan radar detected the vehicle as its range from the radar closed from about 2100 to 1600 nautical miles. U.S. visual and instrumentation intercepts were made in the terminal portion of flight (re-entry).

c. The U.S. had various aircraft operating as near as possible to the Soviet instrumentation ships stationed in the impact area. The following observations were reported:

(1) Color of re-entry body various described as being "body with brilliance of magnesium and tail like a comet" to body being reddish orange color likened to a gas flame.

(2) Separation of re-entry body began to occur about 30-40 seconds prior to impact with "nosecone" descending at about 20° and after body at a steeper angle.

(3) After body began to break up about 5 seconds after separation and parts had a more brilliant glow than re-entry body.

(4) A parachuted black box was observed being ejected from the mike some way the ships.

TOP SECRET

d. Sixth ships, still under surveillance about five hours after impact, had moved only a few miles, possibly in an attempt at recovery of some object.

e. Still too early to be firm on nature of vehicle and objectives of test. Our tentative conclusion at this stage is that the operation may have been re-entry test of ICBM warhead, this because of apparent re-entry angle of recovery. However, we still cannot completely discount Soviet published statements that this test was of a more powerful booster system for space vehicles.

f. The Russians announced on 31 January they fired a rocket 7,700 (minute) miles into the central Pacific which fell less than 1.24 miles from its calculated target. This reported range is consistent with our observations but there is no way of checking the accuracy statement.

2 kilometers

c. In summary, USSR made considerable progress in ballistic missiles during 1959.

1. Soviet ICBM test-firing program has proceeded in orderly manner—while evidence still inadequate to judge precise timing, we believe that for planning purposes we must estimate that by 1 January 1960, USSR had initial operational capability with series produced ICBM's.

2. IOC defined as first few-day, 10-ICBM's in hands of trained personnel at completed launching facility.

3. Might add here with rugged-ness Soviet ICBM booster, vehicle design is apparent beneficial factor their successful launching ICBM's, space vehicles. (750,000 pound total boost lifting 250,000 pounds total take-off weight.)

B. Estimated Soviet ICBM Characteristics

1. Soviet ICBM probably capable of carrying about 5,000 pound nuclear warhead of multi-megaton (up to 5-off record) yield to 5,500 nautical miles.

2. Have recently conducted another re-examination of Soviet ICBM accuracy.

3. Estimated CEP under operational conditions at IOC date was probably about 3 n.m. with the missile using a radio-inertial guidance system. [illegible] all-inertial guidance will probably be introduced in 1963-64. We estimate that by 1966, the accuracy (CEP) of the all-inertial system could be about 2 n.m. and that of the radio-inertial could be somewhat better. Some difference of opinion in intelligence community as to this estimate of accuracy, as the data is far from precise. This question is under continuous study. (Gen. Garman' backup sheet)

4. In-flight reliability of the missile, i.e., from the time it leaves its launcher until detonation in target area, is now estimated at between 80 and 90 percent at IOC, and improvable to 70-85 percent after about 5 years. On-launcher reliability estimated at 80 percent at IOC, 90 percent three years later. This question is also under continuous study--this is a complex problem and percentages given are our best present estimates of reliability under operational conditions.

VII. FUTURE GROWTH OF SOVIET INTERCONTINENTAL STRIKING CAPABILITIES

A. Will be primarily a function of development, production, and deployment of ICBM's.

B. Intelligence community has estimated ICBM force goals Soviets might establish over next few years. We estimate that present Soviet ICBM program would provide some 150-200 ICBM's on launcher in mid-1961. This assumes a total inventory of 175-200 and a total production of some 220-250.

1. Production of missiles could be accomplished in available plant facilities--bulk of effort would be in constructing launching facilities, activating and training ICBM units, and providing logistic support.

2. Even to have 140 ICBM's on launcher in mid-1961 would require a vigorous program--to have 200 at that time would introduce considerable strain on their industry.

3. But such programs could be accomplished by mid-1961, along with other Soviet military programs, without appreciably hindering present Soviet plans for industrial development (7-year Plan period).

c. There is also a fairly broad spread in our estimate of the Soviet ICBM force after 1961.

1. Based on present evidence of Soviet policies and programs, our estimate of Soviet ICBM's on launcher is in the range of 200-300 in mid-1962 and in the range of 350-450 in mid-1963.

2. Air Force intelligence believes that growth of missile force after 1961 will be considerably greater than this, particularly

3. All of us in intelligence community recognize that course of Soviet program is likely to be affected by changing technology and by developments in international situation.

4. Hence, we believe that any numerical projections, particularly beyond 1961, must be carefully and continuously reviewed in light of all evidence we may obtain as to urgency and priority which Soviets give ICBM program.

5. Our analysis shows USSR would probably estimate that it would have its most favorable opportunity in 1961, through rapid buildup in ICBM's, to gain certain military, political, and psychological advantages over U.S.

1. After about that time, assuming that our own missile buildup proceeds on schedule, particularly the planned increase in semi-hardened and hardened US ICBM silos, would result in very sharp increase in Soviet ICBM requirements to knock them out.
2. Plus our bombers on alert or modernized;
3. Plus carriers and missile-launching submarines at sea;
4. Plus any other bases they failed to neutralize particularly our overseas bases.

3. Present indications are that Soviet ICBM program is not a "crash" program. But we believe it is designed to provide a substantial ICBM capability at an early date. (Backup sheet referring to "crash" program)
   1. Goal is probably a force as large as they think necessary for substantial deterrent and pre-emptive attack capability of considerable proportions. That is, capability to make the initiative form an enemy believed to be preparing to attack.
   2. This would be consistent with present deliberate and orderly tempo of Soviet ICBM test firings. And with Soviet policy of maintaining balance among various types of military forces during a transition to increased reliance on missiles, and pre-occupation with achieving 7-Year Plan goals.

TOP SECRET

VII. COMPARISON WITH LAST YEAR'S ESTIMATE

A. In comparing the NIE estimate I have given you today with the estimate we presented last year, it is necessary to point out that last year we addressed ourselves primarily to the question as to what year the Soviet Union could be expected to accumulate arbitrarily-selected number of 100 ICBMs in inventory, whereas this year we have directed our primary attention to the number of weapons the Soviets could be expected to have on launcher on selected dates. Therefore not fully comparable.

CHART (Last year-this year) B. Brief from chart--cover the following points:

1. IOC date change and change to series-produced missiles.

2. On-launcher capability more significant than inventory.

Production - total missiles series produced

Operational inventory (assigned to operational units)---production less missiles used for test, training, pipeline, maintenance

On-launcher - missiles at fully completed launching facilities, with trained crews, and in readiness.

3. Comparison shows mid-points of last year's probable estimate of capability to have 100 in inventory three years after IOC date, 100 in half that time. Interpolated to derive mid-year's comparable to current estimate. (Note: Also estimated that "with overriding priority and exceptional success, this capability might be achieved in as little as two years after IOC.")

TOP SECRET

4. Now consider that available evidence does not support estimate of "crash" program, but still estimate a vigorous one (twelve since available)

5. Current estimate of inventory for mid-1961 boosts last year's, whereas current figure on launcher is considerably higher. Last year assumed 50 percent on launcher, this year take into account Soviet option to maximize sales capability.

6. Current estimate of inventory for mid-1962 somewhat below figure given last year but critical figure on launcher ranges upward from last year's mid-point.

C. Characteristics

1. Probable payload increased

2. In-flight reliability increased

3. Additional reliability factor (on-launcher) taken into account.

4. Accuracy improved increased.

D. Over-all Summary--Current estimate forecasts for Soviets substantially the same quality of ICBMs as last year, but forecasts ICBM of considerably higher quality.

IX. MEDIUM RANGE BALLISTIC MISSILES

A. For delivery of nuclear warheads against land targets at medium ranges (and this would include most of our overseas bases), USSR has had 700 n.m. ballistic missiles (and of course shorter range missiles) available for the past few years, and we believe 1,100 n.m. missiles became operational in late 1958 or early 1959.

B. Inventory of 700 and 1100 n.m. missiles estimated at a total of about 320 in mid-1960 (100 on launchers, and about 400 produced.)

1. Estimate that both types are in series production.

2. Believe troops have trained with both, and have some sketchy evidence of deployment of 700 n.m. missiles, with Soviet forces in East Germany, and possibly both 700 and 1100 n.m. missiles in the Soviet Far East.

3. Know little about the deployment of MRBMs or IRBMs.

X. AIR-TO-SURFACE MISSILES

A. Since 1955-57, Soviets have had submarine mobility missile with maximum range about 55 nautical miles, carrying an HE or nuclear warhead.

B. As U.S. defense capability increased, we believe Soviets developed improved air-to-surface system.

c. Intelligence community estimates that in about 1961, a supersonic missile of this type and range about 350 nautical miles will be in use.

XI. AIR DEFENSE MISSILES

A. In the surface-to-air missile category, two large rings comprising 56 fixed installations surrounding Moscow remain unique. However, two a second such operational installation been identified.

PHOTOS 1. Soviets are also deploying second-generation surface-to-air system capable of more effective delivery of high explosive or nuclear warhead against present Western bombers. The effectiveness of this system against very low altitude attacks cannot validly be determined.

2. This system has been identified in East Germany and and in defensive positions around many Soviet industrial and population centers. In contrast to massive, immobile system around Moscow, new system is flexible and can at less cost, be deployed widely for defense of large areas, smaller fixed points, and forces in the field.

B. In air-to-air missile category, we estimate that USSR has several types of short-range air-to-air missiles. Believe longer range missile with nuclear warhead could be available this year. Estimates based almost entirely on military requirement rather than tangible evidence.

XII. SOVIET SPACE PROGRAM

A. Space Activities

Since my last appearance before you two events have occurred which concern special interest, namely LUNIK II and III.

1. LUNIK II

a) Launched on 12 September 1959

b) U.S. and UK radiotelescope sites have evidence of impact on moon. Reported loss of telemetry signals (on 19.995 and 183.6 megacycles) at time predicted by Soviets. Jodrell Bank radiotelescope reported the expected change in frequency as LUNIK II approached moon. U.S. stations either reported increase in signal strength or visible appearance (this explained as being signal amplification resulting from reflection of signal from moon's surface) and signal loss at predicted impact time.

c) Khrushchev arrived in the U.S. on 15 September 1959, a matter of only a few hours after impact on moon was announced.

d) The intended point of impact was not announced. Therefore, a meaningful statement of guidance accuracy cannot be made.

TOP

e) Although LUNIK II was spectacular, did not represent as major technological advancement as LUNIK III.

3. LUNIK III

a) Launched 4 October 1959, on the 2nd anniversary date of SPUTNIK I.

b) Only several hours after launch, program was announced as being to photograph the moon.

c) The intended trajectory is not known. However, the announced mission, which was photography, was accomplished. Jodrell Bank was able to intercept signals on one of the announced frequencies at the times announced in advance by the Soviets. U.S. intercepts were not practical because transmissions were ground activated while LUNIK III is line-of-sight of USSR.

d) Signal ceased after 7 November 1959. This was announced by the Soviets. Soviets speculate LUNIK III struck by a meteorite, but we consider it equally possible that a normal equipment failure may have occurred.

e) Western scientists could not reproduce photographs from transmitted data. This caused by Soviet failure to announce in advance frequency for transmitting photographic data. Jodrell Bank radiotelescope was therefore not prepared to accept fully the

tele-facsimile type of signal actually transmitted and received good signals from only transmitter only. Nevertheless, we accept Soviet photographs as genuine.

f) Considerable data other than photographic were transmitted and recorded by U.S. on tape. Soviets have not identified these data, we have been unable so far to produce meaningful analysis.

g) We consider LUNIK III a very great technological achievement. Clearly attests to very high Soviet capability in designing and developing sophisticated stabilization, photographic and data transmission systems. Very complex operation to place vehicle on proper trajectory stabilize in proper attitude and automatically record and transmit data to ground station.

C. Vehicle Design

1. Analysis of photographs of Soviet missiles and evaluation of LUNIK last stage indicates that Soviet structural design is heavier and more rugged than U.S.

2. If, as seems likely, the Soviets developed their large ICBM and space vehicle engine from 200 metric ton unit, first tested in 1957, it might now have higher thrust and increased payload capability.

3. We estimate that within a few years they may achieve thrust ratings of 2 million pounds or more using cryogenic fuels.

4. With such engines, feasible to place into low earth orbits, total weights on order of 25,000 pounds, or higher.

D. Recovery Attempts

1. USSR may have attempted two recoveries of same space or capsules from two long range rocket flights in October 1960. No information available as to success of these attempts.

2. There is no evidence that USSR has attempted to recover payloads from orbiting vehicles as has U.S.

E. Men in Space

1. There have been several recent reports that Soviets have already attempted to recover a man from space. No evidence to lend credence to these reports, however.

2. Khrushchev, Chairman of the Soviet Interagency Commission on the Interplanetary Communications (ICIC), on recent visit to Washington stated that "the problems of astronaut recovery have not yet been solved."

3. In summary, little is known of USSR plans for early man-in-space operations except apparent determination to recover man from orbit as an early date as initial step toward proclaimed ultimate aim of manned exploration of space.

F. Objectives and Scope

1. Overall objectives of Soviet space program are judged to be the following: to conduct scientific research; to attain manned space travel; and to support Soviet propaganda and policy.

2. No direct evidence that Soviets are developing space systems for military use, whether as weapon carrier or support system in such areas as reconnaissance, communications or early warning.

3. Capable of developing such military support systems if and when requirements arise. However, existence of less certain reduces Soviet requirements for reconnaissance satellite as compared to U.S. Large continuous geographic area of USSR reduces need for communication satellite.

4. Soviet exploration of space to date has comprised six major events, three satellites and three lunar probes.

C. Future Soviet Space Programs

1. We have no firm evidence on Soviet future plans for exploration of outer space with either manned or unmanned vehicles.

2. We believe they will continue to expand their scientific research in space with further unmanned earth satellites, lunar probes (including satellites and soft landings), and solar and planetary probes.

3. Early this month, (Jan 60) Glagolyev, a member of the Interagency Commission on Interplanetary Communication, stated that the Soviets will launch a series of smaller unmanned satellites for scientific research.

4. Since manned exploration of planets is an unprovided Soviet objective, manned experiments will probably be conducted in earth satellites, circumlunar flights and soft landings on moon.

5. We expect that all manned flights into outer space will be preceded by tests with animals, unless for political purposes Soviets attempt high risk program.

6. No attempt made to estimate manned space missions beyond earth-moon realm. The periods in which major sub-systems, such as propulsion, guidance, and controls for prolonged manned flight can be developed into a complete space flight system cannot be foreseen.

BACKUP

Why Not "Crash" Program

1. Rate of testing of ICBM (see chart) does not support "crash program". Judgement of panel of U. S. experts (Hyland panel) confirms this judgement - testing appears to be orderly and executed at deliberate - but not slow - pace.

2. TT has only one launcher for ICBM R&D, space and firings for training purposes. A second now under construction, probably not yet completed.

3. No firm evidence that any of ICBM firings to date are primarily for troop training - all have been extensively instrumented for R&D - though we expect some troop training for first few crews occurred concurrently with R&D test firings.

4. After missile production problems solved, pace setting elements are providing launching, guidance, maintenance facilities for operational use. Extensive traveler-observer program and technical collection means have provided no firm evidence of any activity associated with this.

5. Lack of such evidence not proof that launching and other operational facilities do not exist. Collection programs underway with highest priority. Can say, the larger the ICBM deployment

program and further along it is, the more likely that such evidence would become available.

6. We have estimated a vigorous program involving peak production rates of 15 to 25 missiles per month, construction of operational facilities for 2-3 launchers per week for more than two years, and total production of

225 - 350 ICBMs by mid-61

550 - 750 ICBMs by mid-63.

7. This estimated Soviet program would require effective planning, operations, and coordination. Schedules we forecast assume that no major delays will be encountered, even though bottlenecks and delays are common to this type of program, especially during first year or more.

8. In summary, current estimate gives USSR a very substantial capability at an early date.

28 Jan 1960